



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

Ref: EPR-N

SEP 10 2009

Sarah Bucklin
Project Manager
Bureau of Land Management
Wyoming High Plains District Office
2987 Prospector Drive
Casper, WY 82604

Re: Draft EIS for Wright Area Coal Lease Applications
[CEQ# 20090209]

Dear Ms. Bucklin:

The U.S. Environmental Protection Agency (EPA) has reviewed the Bureau of Land Management's (BLM) Draft Environmental Impact Statement (EIS) for Wright Area Coal Lease Applications to assess the consequences of holding competitive sales for modified maintenance lease tracts on 18,000 acres of federally-owned solid minerals making available 2.570 billion tons of surface-minable coal in the Powder River Basin (PRB) of Wyoming. Our review and comments are provided pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(c) and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609.

Air quality continues to be EPA's main concern for the energy activities in the PRB. Large surface coal mines have the potential to become particulate emission sources in the PRB contributing to air quality degradation. Although the Wyoming Department of Environmental Quality (WDEQ) has by statute, the authority and responsibility to require mitigation for air quality impacts, the Final EIS should propose additional mitigation measures for air quality impacts that are not directly related to the new leases such as additional dust suppression. During many recent years, air quality monitoring in the area has shown exceedances of the PM₁₀ standards (particulate matter less than 10 micrometers in diameter, commonly referred to as fugitive dust). Air quality modeling results from the PRB Coal Review (cumulative air quality effects) also predict additional increases in PM₁₀ emissions for this mining area, potentially causing exceedances of the air quality standard. Therefore, we are recommending that the Final EIS analyze more effective dust control measures than the current Best Available Control Technology (BACT) and Best Available Control Measure (BACM) practices and require additional mitigation to reduce fugitive dust from mining the lease tracts and the cumulative effects of mining in the surrounding area.

EPA also has concerns about the impacts of nitrogen dioxide emissions from cast blasting shots and whether the proposed mitigation is sufficient. Voluntary blasting restrictions to control public exposure to NO_x emissions have not always been implemented. Depending on the proximity of public exposure to the explosive fumes, it may be appropriate to incorporate the mitigation measures into the terms of the leases. The most successful control measure would be to eliminate cast blasting entirely as the Eagle Butte Mine has done; alternatively, smaller shots using reduced amounts of explosives could become the standard practice.

The existing PRB Coal Review studies were used effectively in the Draft EIS discussion of the cumulative environmental consequences. We understand that an update to the PRB Coal Review air quality analysis is currently under consideration by BLM. This update is a proactive action by BLM that we support and we are always willing to provide assistance or participate in air quality working groups, if needed. Such an analysis might inform an appropriate control measure strategy to be developed to avoid any adverse impacts.

Consistent with section 309 of the Clean Air Act, it is EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. In accordance with our policies and procedures for reviews under NEPA and Section 309 of the Clean Air Act, EPA is rating this Revised Draft EIS as EC-2 (EC - Environmental Concerns, 2 - Insufficient Information). This rating means that our review identified environmental impacts that should be avoided in order to fully protect the environment and the Draft EIS lacked sufficient information and analysis regarding impact mitigation and the analysis of the proposed action's impact on climate change. In addition to EPA's detailed comments on the Draft EIS, a full description of EPA's EIS rating system is enclosed.

Please see the following detailed comments for our specific environmental and informational concerns. If you have any questions regarding our comments or this rating, please contact me at (303) 312-6004, or you may contact James Hanley of my staff at (303) 312-6725.

Sincerely,

/s/ Robin Coursen (acting for)

Larry Svoboda
Director, NEPA Program

Enclosure

Wright Area Coal Lease Applications DEIS

Technical Comments

Air Quality Modeling

1. Near Field Impacts -- Direct project impacts using the air dispersion model ISCLT3 for annual PM₁₀ and annual NO_x concentrations were disclosed in the Draft EIS for base case and maximum emission scenario years for each of the three mines. No PM_{2.5} impact analysis was conducted in the near field for the Draft EIS. In all cases the modeling predicted compliance with the PM₁₀ annual Wyoming Ambient Air Quality Standards (WAAQS). No 24-hour PM₁₀ near field predictions were made for the Draft EIS in conformance with the 1994 Memorandum of Agreement between EPA and Wyoming Department of Environmental Quality (WDEQ) that involves comprehensive air monitoring conducted in the area in lieu of PM₁₀ modeling. NO_x modeling results were compared against the NO₂ National Ambient Air Quality Standards (NAAQS) (assuming 100% NO_x to NO₂ conversion) and were generally lower than the NAAQS with one exception. For the Jacobs Ranch Mine year 2013, the NO_x prediction was 55 ug/m³ which exceeds the NO₂ NAAQS by 2 ppb.

Recommendation: The Final EIS should present potential PM_{2.5} near field impacts from the project and identify measures to reduce the NO₂ impacts from the Jacobs Ranch Mine.

2. Additional PM₁₀ Mitigation -- Monitoring data in 2007 exceeded predictions of the WDEQ Permit Model. WDEQ approaches PM₁₀ control in the Wyoming PRB coal mines through use of a conservative Fugitive Dust Model to determine coal production levels that will not exceed the annual NAAQS at any monitor when required BACM (Best Available Control Methods) are used; and with monitoring data (in the absence of accurate short term models) to show that at actual production levels, 24-hour PM₁₀ NAAQS exceedances do not occur.

Recommendation: To ensure compliance with the PM₁₀ standards, EPA believes that either mine emissions or emissions from other area sources must be reduced before PRB operations are expanded to realize the upper range of future coal production. We recommend that the Final EIS add additional mitigation measures to reduce fugitive dust emissions. These mitigation measures would be in addition to BACM and should be incorporated into the terms of the proposed leases. Through our discussions with BLM on air quality, it appears that it may be more efficient for the lessees to be obligated for mitigation for other activities on BLM land or private lands.

3. NO_x, NO₂ & Ozone - Many of the voluntary blasting (cast blasts) restriction measures implemented by the mines appear to be successful in reducing or eliminating public exposure to high NO₂ emissions. However, NO₂ emission rates described in Section 3.4.3.2.1, page 3-70 of over 4,500 tpy for the Black Thunder Mine alone are very high and may contribute to visibility impairment and the formation of ozone. EPA is

concerned with measured ozone concentrations in the surrounding area. For example, the WDEQ's Thunder Basin National Grassland site has a design value of 72 ppb (2006-2008), which is very near the NAAQS of 75 ppb. Also, on June 26, 2009, EPA published a proposed revision to the NO₂ NAAQS. EPA is considering a new NO₂ NAAQS over a 1-hour averaging period of between 80 and 110 ppb. The EPA plans on finalizing the rulemaking on January 22, 2010. Given the short-term nature of the cast blasts coupled with a very high emission rate of over 4,500 tpy, we are concerned that compliance with the proposed NO₂ 1-hour NAAQS may be problematic.

Recommendation: Because of the high levels of existing ozone levels and our concerns with short-term NO₂ impacts, we recommend that the BLM and proponents should consider additional NO_x mitigation strategies that would reduce visibility impairment, ozone and NO₂ concentrations in the area.

4. (Draft EIS section 3.4.3.2.1) Mitigation for Nitrogen Dioxide Emissions. On page 3-66, the Draft EIS states that Wright Area Mines have already implemented voluntary measures to reduce NO₂ emissions. Because the measures are voluntary, the mine operators may choose not to implement the mitigation measures. It should also be noted that the measures for the mines do not include a prohibition of blasting when conditions are unfavorable (large blast, wet conditions, weather inversions, little wind, wind direction towards residences/road, etc.) The existing mitigation merely requires notification and monitoring.

Recommendation: We recommend that a condition of approval be added to the lease prohibiting blasting when conditions are unfavorable. The mines would then need to analyze the size of blasts in conjunction with weather conditions and potential public exposure to prevent exceedances of the EPA and NIOSH recommended toxicity levels. The Final EIS also needs to more fully describe the types and levels of mitigation and how the mitigation will be implemented to reduce exposure to nitrogen dioxide. For example we understand that several of the mines have reduced the sizes of blasts, changed the composition of the explosive agents used for blasting, and/or changed the placements of blasting agents.

Specific Air Quality Narrative Comments

5. The Executive Summary (ES) presents significance levels for fugitive dust and tailpipe particulates and includes a short discussion of other existing air pollutant sources. EPA recommends inclusion of a summary of the greenhouse gas emissions analyzed in Section 3 and 4 within the Executive Summary.
6. ES-36. It would be helpful to present the value for the annual NO₂ NAAQS within the text so that readers may make comparisons to the maximum modeled NO_x concentrations shown on Figures ES-8, ES-9, and ES-10.
7. Figure ES-11. Explain in the text why a 3-mile buffer was chosen to depict the potential for public exposure to emissions from surface mining operations.

8. Tables 4-11 through 4-14 of the Draft EIS disclose potential cumulative impacts that were tiered from the October 2008 PRB Coal Review Cumulative Air Quality Effects project. The PRB Coal Review disclosed cumulative adverse impacts from PM_{2.5}, PM₁₀, and visibility impairment at Class I areas under the three modeled scenarios. Specifically, for both the lower and upper coal development scenarios in 2015, the 24-hour PM_{2.5} prediction is 179.5 µg/m³ (NAAQS is 35 µg/m³) and the annual PM_{2.5} prediction is 18.7 µg/m³ (NAAQS is 15 µg/m³). For both the lower and upper coal development scenarios, the PM₁₀ modeling predicted 24-hour impacts of 512.8 µg/m³ (NAAQS is 150 µg/m³). These predictions are all well over the NAAQS for PM_{2.5} and PM₁₀. The 1994 Memorandum of Agreement between EPA and WDEQ does incorporate monitoring in lieu of short-term PM₁₀ modeling. However, for planning purposes we believe the type and location(s) of the emissions contributing to these concentrations should be presented in the Final EIS. Since the PRB Coal Review modeling work is under consideration by BLM, we believe this updated analysis should capture all sources within a modeling domain large enough to determine cumulative impacts including PM₁₀, ozone and visibility. The analysis should also present source attribution contributions associated with the locations of predicted elevated pollutant levels. Such an analysis might inform an appropriate control measure strategy to be developed to avoid the predicted adverse impacts.
9. 3.4.1.1 (Table 3-8) Assumed Background Air Pollutant Concentrations. This table contains references to several air monitoring site data collected generally from 2002-2004. The Table units are presented as ug/m³, however, for some of the parameters it appears that ppb units may be shown instead. We recommend using consistent units throughout the table. It also appears that some of the units are incorrect. Please ensure units are correct. In addition, there are much more recent data available from 2006 and 2007 that should also be incorporated into the table.
 - a. The background concentration for NO₂ is listed for the Thunder Basin National Grassland Monitoring Site, which is located more than 20 miles north of Gillette. Please replace this location with the WDEQ site southwest of Gillette which generates NO₂ monitoring data and would be more representative of true background conditions.
 - b. Data for SO₂ should be updated to include more recently measured concentrations at the Wyodak Site 4 monitoring station in Campbell County, Wyoming.
 - c. It is unclear why data from Eagle Butte Mine was used for background PM₁₀ in Table 3-8. There are numerous nearby PM₁₀ monitoring sites in the southern PRB, including the WDEQ site southwest of Gillette. For air quality analysis purposes, data presented as Background Data should be data that represents base case ambient conditions near the proposed action.
 - d. Page 4-42 references the Memorandum of Agreement between the WDEQ and EPA (January 24, 1994). A condition of the agreement is to continue PM₁₀

monitoring near the mine to ensure compliance with the 24-hour PM₁₀ NAAQS. BLM should ensure that the mine operator(s) consult with the WDEQ on any monitoring site adjustments or additions due to the proposed expansion of the active mine area. Particular attention should be made to placement of monitors closer to the active mine areas in order to determine maximum impacts from the mines.

10. Section 3.4.2.3, Page 3-63, text states that “While PRB mining operators have already implemented these control measure in practice, formal approval of the NEAP [Natural Event Action Plan] for the mines in the PRB by EPA Region VIII is still pending”. EPA Region VIII approved the WDEQ NEAP on March 13, 2007.
11. Section 3.4.2.3, Page 3-63, the full paragraph describes the NEAP for the mines in the PRB in the context of an Exceptional Event; this is no longer strictly applicable. The Exceptional Event Rule of March 22, 2007 no longer requires a NEAP. However, according to the preamble to the Exceptional Event Rule (Signed March 22, 2007, Effective May 21, 2007), “The EPA believes that it is advantageous for States to keep NEAPs in place that are currently being implemented in order to address the public health impacts associated with recurring natural events such as high wind events. However, following the promulgation of this rule, States will no longer be required to keep NEAPs in place that were not approved as a part of a SIP for an area”. We believe the NEAP should be retained because it provides the flexibility to control other emission sources, like fugitive emission sources, that otherwise might not be controlled with BACT. We believe the BACM specified in the NEAP contains an appropriate and reasonable minimum level of control as required under the Exceptional Event Rule for the PRB coal mines. Additional mitigation of PM₁₀ should be introduced if PM₁₀ exceedances occur at Wright Area Coal Lease mines.
12. We recommend that the Final EIS disclose that emissions from coal combustion have been identified as a significant source of atmospheric mercury. EPA's web site at <http://www.epa.gov/mercury/report.htm> has several reports summarizing the environmental impacts of mercury, primarily bioaccumulation in the aquatic food web. Concentrations of mercury emitted as a result of combustion vary depending on the chemistry of coal deposits and the type of air pollution controls.

Recommendation: For purposes of the Final EIS, we recommend including any existing information on mercury emissions from power plants currently burning coal from the PRB mines.

Cumulative Environmental Consequences

13. Adverse visibility impairment impact days were also identified in the Draft EIS. These include 26 days at Badlands National Park, 32 days at the Northern Cheyenne Indian Reservation and 18 days at the Wind Cave National Park for the lower 2015 Coal Development scenario.

Recommendation: The Final EIS should add additional mitigation measures to reduce the days of visibility impairment in these Class 1 areas. Since the PRB Coal Review modeling work is under consideration by BLM, we believe this updated analysis should capture all sources within a modeling domain large enough to determine cumulative impacts including PM₁₀, ozone and visibility. The analysis should also present source attribution contributions associated with locations of predicted elevated pollutant levels. Such an analysis might inform an appropriate control measure strategy to be developed to avoid the predicted adverse impacts.

14. Section 4.2.14.1 presents an analysis regarding global climate change and Greenhouse Gas (GHG) emissions. EPA recommends the following updates and changes to this section:

- a. Greenhouse gas emissions from burning the coal should be calculated in the Final EIS and reported in millions of metric tons CO₂-equivalent per year or comparable units. Although the coal is sold as a commodity, the emissions can be calculated using coal production and emissions factors. For a more detailed analysis, the BLM may want to consider calculating the differences in CO₂ emissions from the combustion technologies described in the Draft EIS (standard combustion, IGCC, advanced pulverized coal, circulating fluidized bed).
- b. The Final EIS should disclose the measures the coal mines are using or plan to use to reduce or mitigate direct greenhouse gas emissions, including but not limited to reduction of coalbed methane and railroad locomotives' emission reductions. Mitigation measures designed to reduce the GHG emissions per unit of coal produced needs to be analyzed.
- c. The Final EIS should update the information regarding climate change modeling. For example, the last two paragraphs on page 4-110 of the Draft EIS, starting with "Tools necessary to quantify incremental climatic changes associated with those factors for the projected development activities in the PRB are presently unavailable" and the last paragraph on page 4-110 should be deleted or rewritten to describe current climate change prediction modeling.
- d. The last paragraph of Section 4.2.14 suggests that estimates of greenhouse gas emissions from the combined or cumulative mine operations can be found at Section 3.4.5, but the reference should be to Table 3-24 found in Section 3.18.2 on Page 3-307.

The broader cumulative impact analysis should also factor in the success of reclamation and mitigation plans for various resources. Mining reclamation works well for restoring some aspects of resources such as grazing livestock and wildlife, and visual aesthetics. Other resource values may take a longer time to return to full function or may not be restorable at all (e.g., wetlands, groundwater, and unique habitats).

Recommendation: We recommend that the impact sections for resources that are substantially impacted by cumulative impacts be reevaluated to determine how the impacts will overlap in time and for the resource as a whole. For example, does the timing of maximum impact from other activities (e.g., coalbed methane) coincide with the peak of impacts from coal mining? Are any resources impacted by coal mining approaching sustainability limits because of cumulative impact levels?

Wetlands

15. (Section 3.7.3) Wetlands Compliance, Mitigation and Monitoring. The wetlands mitigation plan needs to be amended to compensate for the long-term loss of wetland values during and following mining. The mitigation ratios may need to be increased to compensate for the temporal loss of wetlands. Wetlands obviously cease to function during the 10 to 20 years of mining. However, wetlands fed by groundwater will not regain function until the ground water table recovers. We recommend that additional mitigation be established to compensate for the long-term loss of wetland values. The mitigation plans for previous or current reclamation may provide good locations for increasing wetlands in the area. Alternatively, the mines may want to improve other wetlands damaged by overgrazing, poorly constructed roads, or off-road vehicle damage.

Wildlife

16. (Section 4.2.8.4) Special Status Species. The analysis for wildlife impacts should be based on the habitat needs of the species of concern, rather than the specific boundaries of the mines and lease tracts. There also needs to be sufficient analysis to understand the impacts of the Lease by Application (LBA) decisions. For example, on page 4-71, the Draft EIS states that no sage grouse leks occur within five miles of the Wright Area Coal LBA tract. It is unclear if the absence of nesting areas is important to the decline in sage grouse population or if there are sufficient numbers of leks nearby to sustain the population. In addition, this information does not appear to be consistent with the cumulative impacts discussion in the last paragraph of page H-67, which states that "Given the absence of grouse, and the limited quantity and marginal quality of potential grouse habitat in the area, US Department of Agriculture-Forest Service Management Direction guidelines for Management Indicator Species (MIS) do not apply to this project." By looking at sage grouse habitat on a component-by-component basis and mainly on LBA and mining properties, the impacts of the LBA decisions on the health and sustainability of the grouse population in this area are not presented. We note that a full biological assessment and evaluation document is being prepared for review in addition to the information in the Final EIS analysis.